

**CARVALHOISCA, A NEW GENUS OF ORTHOTYLINI FROM
MEXICO (MIRIDAE, HETEROPTERA)**

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Abstract.—The orthotyline genus *Carvalhoisca* and the species *C. jacquiniae* from the state of Oaxaca and *C. michoacanus* from the state of Michoacan are described as new. A scanning electron micrograph of the stridulatory device of *C. jacquiniae* is presented. Illustrations of the male genitalia are provided. It is not obvious to what other genera *Carvalhoisca* may be related.

Key Words: Heteroptera, Miridae, Orthotylini, *Carvalhoisca*, new genus, new species

The genus described herein represents another new genus of the rich and diverse orthotyline fauna found in the arid regions of southern Mexico. The two species of this rather unusual genus are found on plants of the genus *Jacquinia* Linnaeus, which is widely distributed through the New World tropics. Measurements are given in mm.

***Carvalhoisca* n. gen.**

Characterized by the small size, minutely granulate surface, wide and sharply declivent head, rather quadrate pronotum, deeply incised cuneal fracture, and the presence of a stridulatory device involving the hemelytron and hind femur.

Body appearing minutely granulate, not shining, vestiture consisting primarily of scattered decumbent hairs. Head sharply declivous, almost as wide as width of pronotum; vertex with posterior margin sharply angulate, frons slightly rounded; clypeus weakly delimited from frons, recurved; jugum, clypeus, lorum, buccula, and gena small relative to size of head; eyes large, touching pronotum; antennal socket contig-

uous with anteroventral margin of eye, length of antennal segments in ascending order I-IV-III-II, vestiture semidecumbent; rostrum extending beyond hind coxae.

Pronotum flat; calli weakly delimited; collar extremely narrow, clearly delimited; anterior and posterior corners of pronotum angulate; lateral margins angulate, straight; posterior margin convex; mesoscutum covered; scutellum convex; corium curved downward along costal margin; embolium only delimited basally, costal margin with well-developed stridulitrum (Fig. 2); cuneal fracture deeply incised, moderately deflected; femora only slightly incrassate, with three setae or trichobothria longer than diameter of femur, hind femur with plectrum (Fig. 2); tibiae lacking erect spines or setae. Apex of abdomen of male somewhat pointed; parameres small.

Type species: *Carvalhoisca jacquiniae* n. sp.

We take great pleasure in naming this genus in honor of Dr. J. C. M. Carvalho, Museo Nacional, Rio de Janeiro, Brazil, whose contributions to our knowledge of the mirid fauna of the neotropics are unexcelled.

This distinctive genus exists at couplet 82 with the genera *Amixia* Reuter and *Aserymus* Distant in Carvalho's key to the mirid genera of the world (1955) but bears no particular resemblance to either. Its relationship to other New World genera is not readily apparent, but it is superficially similar to *Adfalconia* Distant.

Due to the small size of the insect, the stridulatory device is difficult to see with an ordinary light dissecting microscope. This type of stridulatory apparatus has been reported as occurring in other mirid subfamilies.

The host plant for these two mirid species are members of the genus *Jacquinia* (Theophrastaceae). These plants have stiff narrow leaves, the tips of which are acuminate, imparting some protection for the bugs that feed rather openly among the leaves. Both nymphs and adults of the two species were taken. The chlorotic spots on the thick leaves caused by the feeding were readily apparent and were somewhat like the damage seen on orchids caused by members of the bryocorine genus *Tenthecoris* Scott or that caused by *Caulotops* Bergroth or *Halticotoma* Townsend on *Yucca* Linnaeus.

Approximately 50 species of *Jacquinia* are known from tropical America, including the West Indies. Nine species have been reported from Mexico. Inasmuch as the *Carvalhoisca* species described are from the northern areas of the plant distribution, it is likely that additional species of this mirid genus will be found. The crushed fruit of this plant has been reported (Standley 1923) to be widely used by Indians to stupefy fish and also as a medicinal plant.

Carvalhoisca jacquiniae n. sp.

(Figs. 1, 2)

Male (measurements of holotype given first followed in parentheses by means and ranges, n = 20): Length, 1.88 (1.93, 1.74–2.04); width, 0.96 (0.98, 0.90–1.04). Head length, 0.16 (0.14, 0.12–0.16); width through eyes, 0.68 (0.70, 0.68–0.74); vertex width,

0.30 (0.30, 0.28–0.30). Length of antennal segment I, 0.24 (0.23, 0.20–0.24); II, 0.72 (0.75, 0.70–0.82); III, 0.36 (0.39, 0.36–0.42); IV, 0.28 (0.30, 0.28–0.34). Pronotal length, 0.32 (0.33, 0.32–0.34); width, 0.76 (0.78, 0.74–0.84). Cuneal length, 0.36 (0.34, 0.32–0.36); width, 0.22 (0.24, 0.22–0.24).

General coloration black with appendages pale yellowish white. Head black downward to level of antennal insertions, juga and area of clypeus between juga reddish brown, lora and area of clypeus between lora pale; antenna pale, faint reddish brown coloration on base of antennal segment I; rostrum pale, dark fuscous at apex. Thorax, including scutellum and hemelytron, dark fuscous to black, membrane of hemelytron paler along outer margin; bases of mid and hind coxae dark fuscous, remainder of legs pale. Abdomen dark fuscous.

Morphological characters are given for genus. Genitalia similar to those of *C. michoacanus* (Figs. 3–5).

Female (means followed in parentheses by ranges, n = 20): Length, 1.96 (1.84–2.08); width, 1.03 (0.92–1.12). Head length, 0.17 (0.12–0.22); width through eyes, 0.74 (0.68–0.78); vertex width, 0.35 (0.34–0.36). Length of antennal segment I, 0.22 (0.20–0.24); II, 0.61 (0.54–0.66); III, 0.34 (0.30–0.36); IV, 0.30 (0.26–0.34). Pronotal length, 0.34 (0.30–0.36); width, 0.83 (0.74–0.88). Cuneal length, 0.32 (0.28–0.36); width, 0.26 (0.24–0.28).

Similar to male in form and color.

Holotype: ♂, MEXICO: Oaxaca, 2.1 mi. nw. Totolapan, July 11–17, 1981, [D. S.] Bogar, [J. C.] Schaffner, [T. P.] Friedlander. Deposited in the collection of the Instituto de Biología, Universidad Nacional Autónoma de México, México, D.F.

Paratypes: 24 ♂, 76 ♀, same data as holotype: ♂, 4 ♀, same locality as holotype, August 7, 1980, [J. C.] Schaffner and [T. P.] Friedlander; 8 ♂, 43 ♀, Oaxaca, 10 mi. e. Totolapan, elev. 4000 ft., July 20, 1987, [P. W.] Kovarik, [J. C.] Schaffner. Deposited in

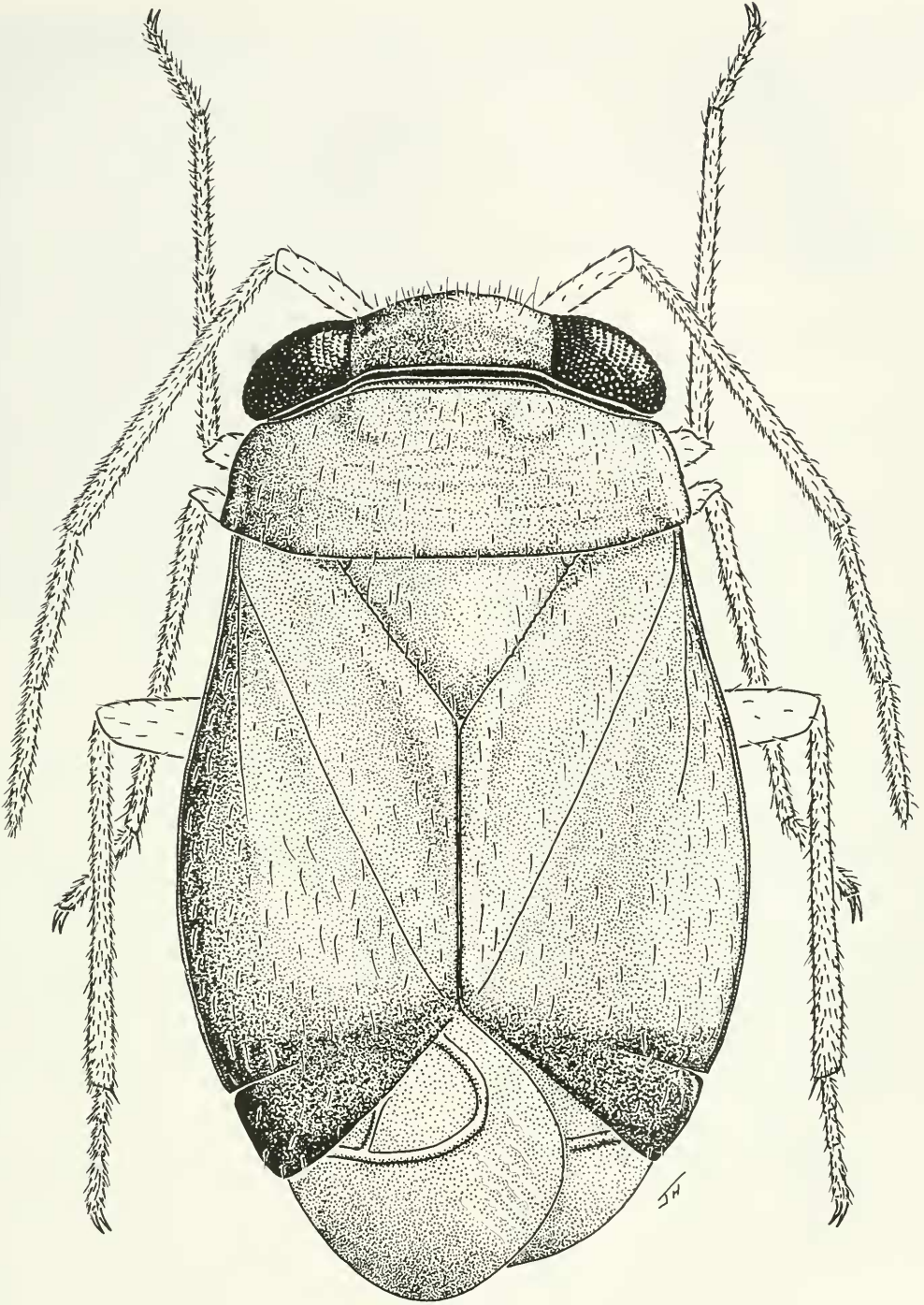


Fig. 1. *Carvalhoisca jacquiniae*, dorsal habitus.

the National Museum of Natural History, Washington, D.C.; in the collection of the Department of Entomology, Texas A&M University, College Station, Texas; in the J. C. M. Carvalho collection, Rio de Janeiro, R.J.; and in the collection of the Instituto de biologia, U.N.A.M., Mexico, D.F.

The host plant for both nymphs and adults of this species is *Jacquinia seleriana* Urb. & Loes.

***Carvalhoisca michoacanus* n. sp.**

(Figs. 3–5)

Male (measurements of holotype given first followed in parentheses by means and ranges, $n = 20$): Length, 1.60 (1.60, 1.44–1.66); width, 0.96 (0.94, 0.90–0.98). Head length, 0.14 (0.12, 0.10–0.14); width through eyes, 0.76 (0.75, 0.74–0.78); vertex width, 0.34 (0.33, 0.32–0.34). Length of antennal segment I, 0.22 (0.21, 0.20–0.22); II, 0.68 (0.65, 0.60–0.68); III, 0.38 (0.35, 0.34–0.40); IV, 0.26 (0.24, 0.24–0.28). Pronotal length, 0.34 (0.34, 0.34–0.36); width, 0.82 (0.81, 0.80–0.84). Cuneal length, 0.32 (0.32, 0.30–0.34); width, 0.20 (0.21, 0.20–0.22).

General coloration black with appendages pale yellowish brown. Head black, juga and base of tylus reddish black, lora and apical half of tylus pale yellowish brown; antenna pale yellowish brown, apex dark fuscous; rostrum pale yellowish brown. Thorax including scutellum and hemelytron black, membrane of hemelytron black becoming abruptly pale near margin; thoracic sterna reddish brown to reddish black; bases of mid and hind coxae dark fuscous, remainder of legs light yellowish brown. Abdomen reddish brown to reddish black.

Morphological characters as given for genus. Genitalia as in Figs. 3–5.

Female (means followed in parentheses by ranges, $n = 20$): Length, 1.72 (1.62–1.84); width, 1.03 (1.00–1.06). Head length, 0.16 (0.14–0.20), width through eyes, 0.80 (0.78–0.82); vertex width, 0.40 (0.38–0.42). Length of antennal segment I, 0.19 (0.18–



Fig. 2. *Carvalhoisca jacquiniae*, costal margin of hemelytron showing stridulitrum and hind femur showing plectrum.

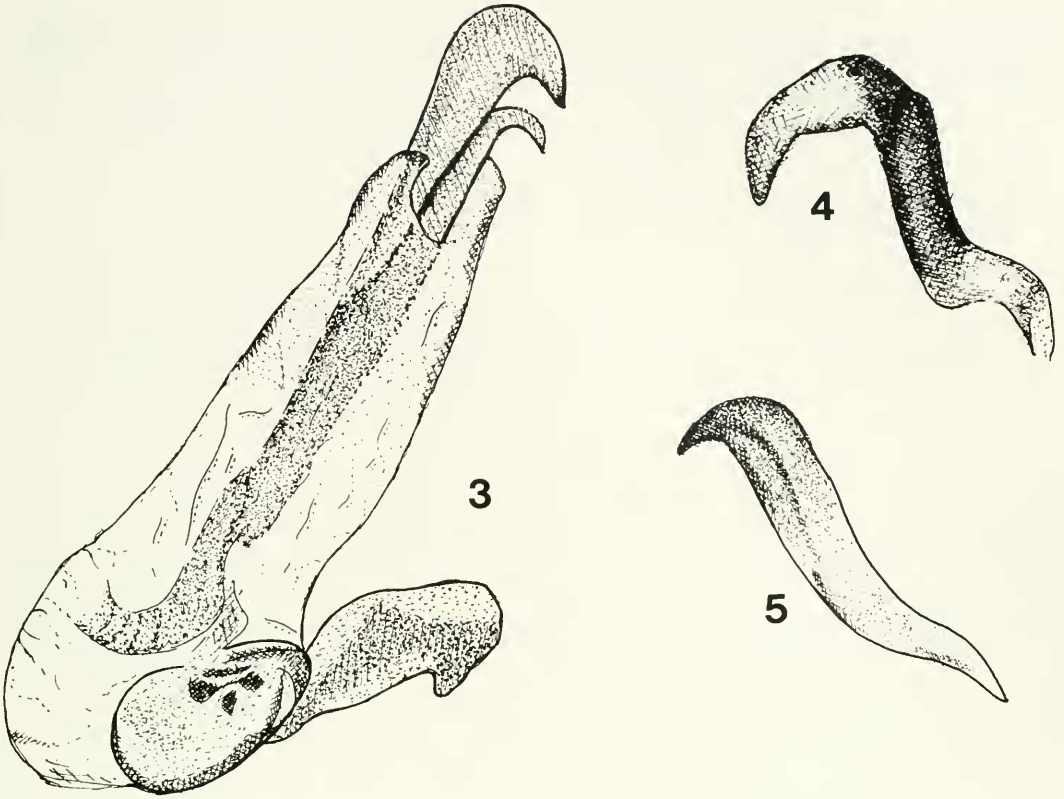
0.22); II, 0.52 (0.48–0.56); III, 0.34 (0.32–0.38); IV, 0.25 (0.24–0.30). Pronotal length, 0.36 (0.34–0.38); width, 0.87 (0.86–0.90). Cuneal length, 0.33 (0.32–0.34); width, 0.24 (0.22–0.26).

Similar to male in form and color.

Holotype: ♂, MEXICO: Michoacan, 28.5 miles south of Nueva Italia, July 9, 1985, [R. W.] Jones, [J. C.] Schaffner. Deposited in the collection of the Instituto de Biologia, Universidad Nacional Autonoma de Mexico, D.F.

Paratypes: 25 ♂, 54 ♀, same data as holotype. Deposited in the National Museum of Natural History, Washington, D.C.; in the collection of the Department of Entomology, Texas A&M University, College Station, Texas; in the J. C. M. Carvalho collection, Rio de Janeiro, Brasil; and in the collection of the Instituto de Biologia, U.N.A.M., Mexico, D.F.

Specimens of this species are nearly al-



Figs. 3-5. *Carvalhoisca michoacanus*. 3. Vesica. 4. Left paramere. 5. Right paramere.

ways shorter than those of *C. jacquiniae*. The males range in length from 1.44–1.66 mm and the females 1.62–1.84 mm. The males of *C. jacquiniae* are 1.74–2.04 mm in length and females 1.84–2.08 mm. The head width of *C. michoacanus* is greater than that of *C. jacquiniae*. The male head width is 0.74–0.78 mm, that of the female, 0.78–0.82 mm. In the case of *C. jacquiniae*, the male head width is 0.68–0.74 mm and the female, 0.68–0.78 mm. The antennal segment lengths are shorter on individuals of *C. michoacanus*. By using the head width divided by the length of antennal segment II, a ratio for easy separation of the 2 species can be derived. The males of *C. jacquiniae* have antennal segment II longer than the head width (1.12–1.23), whereas in the case of *C. michoacanus* the second antennal seg-

ment is shorter than the head width (0.90–0.97). Antennal segment II is 1.39–1.67 times as long as the head width in females of *C. jacquiniae* individuals but only 1.13–1.28 as long for specimens of *C. michoacanus*. We are unable to separate the species on the basis of the genitalia.

The host plant for both nymphs and adults of this species is *Jacquinia pungens* A. Gray.

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